WHAT IS CLAIMED IS:

1. A motor vehicle alternator comprising: a stator; a rotor mounted in the stator; a regulator circuit connected in the alternator and defining a variable reference voltage, the regulator circuit being adapted to vary the excitation of the alternator by comparing a signal representing the output voltage of the alternator with the said reference voltage; and a conversion circuit connected with the said regulator circuit and arranged to receive a pulse width modulated reference control signal, whereby the conversion circuit is adapted to vary the said variable reference voltage as a function of the reference control signal, wherein the conversion circuit comprises, in combination:

- an internal clock with a controllable variable period;

- a difference circuit connected to the internal clock for producing a difference signal between the period of the said reference control signal and the period of a signal from the internal clock;

- a control circuit for the internal clock, connected to the internal clock and the difference circuit, for controlling the clock in response to the said difference signal whereby to equalise the period of the said clock signal with the period of the said control signal; and

- a voltage pulse width conversion circuit connected to the said clock and comprising a counter adapted to be paced by the said internal clock and to perform a count while the reference control signal is at a given logic level, and a digital/analogue converter connected to the counter for converting a value of count supplied to the converter by

the counter into a voltage such as to define the reference voltage of the regulator.

2. An alternator according to Claim 1, wherein the said difference circuit comprises means for producing a symmetrical rectangular signal with a period which is a whole number multiple of the period of the reference control signal.

3. An alternator according to Claim 2, wherein the difference circuit comprises a means for producing difference pulses between the said symmetrical rectangular signal and a signal produced from the internal clock.

4. An alternator according to Claim 3, wherein the difference circuit is adapted so that the width of the difference pulses is proportional to the difference between the period of the reference control signal and the period of the said signal from the internal clock.

5. An alternator according to Claim 3, wherein the difference circuit further includes means for producing a signal representing the direction of the difference signal, at least during the duration of the said difference pulses.

6. An alternator according to Claim 5, wherein the control circuit for the internal clock comprises a bidirectional counter connected to the difference circuit for receiving the said difference pulses and direction signal, and a digital/analogue converter connected to the counter for receiving the output from the counter.

7. An alternator according to Claim 1, wherein the internal clock is a voltage controlled oscillator.

8. An alternator according to Claim 1, wherein the digital/analogue converter of the conversion circuit has a memorisation input, the alternator further including means for applying to the said input a memorisation signal so long as the said reference control signal is at a logic level other than the said given logic level.

9. An alternator according to Claim 1, wherein the whole of the conversion circuit is an integrated circuit.

10. An alternator according to Claim 9, including a semiconductor chip carrying the regulator circuit, wherein the same chip carries the conversion circuit.

11. An interface device for providing an interface between a control apparatus for supplying a reference control signal in the form of a pulse width modulated signal, and a motor vehicle alternator regulating device defining a reference voltage of the said regulating device, the interface device being adapted to convert the variations in the width of the pulses of the said reference control signal into variations in the said reference voltage of the regulating device, the interface device comprising, in combination:

- an internal clock with a controllable variable period;

- a difference circuit connected to the internal clock for producing a difference signal between the period of the said reference control signal and the period of a signal from the internal clock;

- a control circuit for the internal clock, connected to the internal clock and the difference circuit, for controlling the internal clock in response to the said difference signal, in such a way as to equalise the period of the internal clock signal and the period of the said control signal; and

- a circuit for converting pulse width into voltage, connected to the clock and comprising a counter which is adapted to be paced by the said controllable internal clock and which is adapted to perform a counting operation while the said reference control signal is at a given logic level, and a digital/analogue converter which is adapted to convert a value of the count supplied to the converter by the said counter into a voltage such as to define the reference voltage of the regulator.

12. An alternator according to Claim 11, wherein the said difference circuit comprises means for producing a symmetrical rectangular signal with a period which is a whole number multiple of the period of the reference control signal.

13. An alternator according to Claim 12, wherein the difference circuit comprises a means for producing difference pulses between the said symmetrical rectangular signal and a signal produced from the internal clock.

14. An alternator according to Claim 13, wherein the difference circuit is adapted so that the width of the difference pulses is proportional to the difference between the period of the reference control signal and the period of the said signal from the internal clock.

15. An alternator according to Claim 13, wherein the difference circuit further includes means for producing a signal representing the direction of the difference signal, at least during the duration of the said difference pulses.

16. An alternator according to Claim 15, wherein the control circuit for the internal clock comprises a bidirectional counter connected to the difference circuit for receiving the said difference pulses and

direction signal, and a digital/analogue converter connected to the counter for receiving the output from the counter.

17. An alternator according to Claim 11, wherein the internal clock is a voltage controlled oscillator.

18. An alternator according to Claim 11, wherein the digital/analogue converter of the conversion circuit has a memorisation input, the alternator further including means for applying to the said input a memorisation signal so long as the said reference control signal is at a logic level other than the said given logic level.

19. An alternator according to Claim 11, wherein the whole of the conversion circuit is an integrated circuit.

20. An alternator according to Claim 19, including a semiconductor chip carrying the regulator circuit, wherein the same chip carries the conversion circuit.